

# ASSURING THE MOBILITY OF THE FBCT

By Captain Bryon L. Mansfield

**T**hough the concept of assured mobility has been integral to military operations throughout history, it has not been explicitly addressed as a separate concept until recently. The concept of assured mobility encompasses all those actions that guarantee the force commander the ability to move and maneuver where and when he desires—without interruption or delay—to achieve his intent. This concept forms the basis for the mobility of a Future Combat Systems (FCS)-equipped future brigade combat team (FBCT).

The assured mobility concept has four imperatives and six fundamentals that, when conducted properly, reduce the likelihood of enemy interdiction and minimize the need for traditional breaching. These nested and overlapping critical tasks are essential to the assured mobility mission to prevent or mitigate impediments to mobility.

The four imperatives of assured mobility are—

- Develop the mobility input to the common operational picture (COP).
- Develop, establish, and maintain operating areas.
- Attack the enemy's ability to influence operating areas.
- Maintain mobility and momentum.

The six fundamentals of assured mobility are—

- *Predict* actions and circumstances that could affect the ability of the force to maintain momentum.
- *Detect* early indicators of impediments to battlefield mobility using intelligence, surveillance, and reconnaissance (ISR) assets; identify alternatives; and establish surveillance.
- *Prevent* potential impediments to maneuverability from affecting the battlefield mobility of the force by acting early; monitor and protect cleared routes.
- *Avoid* detected impediments to the battlefield mobility of the force; if prevention fails, identify alternatives.
- *Neutralize*, reduce, or overcome (breach) impediments.
- *Protect* against threat force weapons and tactics, techniques, or procedures effects through the application of technology or tactical behavior. This is a continuous process.

The Army's future warfighting concepts place a premium on the ability of the ground force to achieve a position of advantage at all levels of warfare to seize the initiative and conduct rapid, decisive operations. In the past, our conceptual thinking about providing mobility was centered on reactive measures. Our processes, task organizations, equipment procurement, and Soldier and leader training all centered on mitigating the loss of mobility. However, in the contemporary

operational environment, the challenges of an adaptive adversary and future warfighting concepts demand a fundamental shift from the old framework to one that emphasizes proactive mobility—the concept of assured mobility.

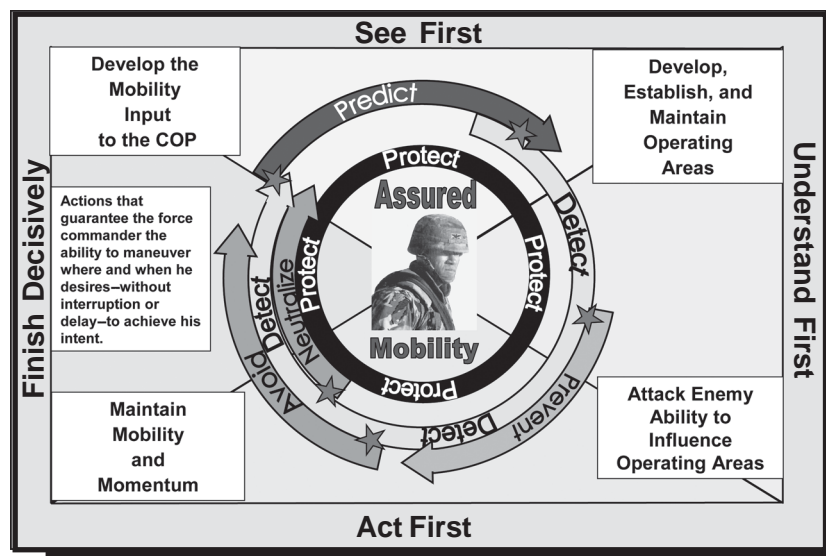
Assured mobility is a vital, enabling combined arms concept that defines one of the predominant roles of engineers and provides the linkage between their actions, force application, focused logistics, and protection. Achieving assured mobility requires a deliberate thought process that drives a series of overlapping and nested actions that will enable our forces to see first, understand first, act first, and finish decisively. This is a continuous process throughout the battle.

## Current Force vs. FBCT

**M**obility operations of the past hinged on embedding mobility enablers within the maneuver force because the technology of the time could not provide this capability at the platform level. The Engineer Regiment has undergone significant organizational changes over the years to bring this capability to the force. Regardless of the manpower issues, these enablers were relatively slow, large, and cumbersome vehicles that were easily identified, targeted, and eliminated by threat forces.

Aside from this, the majority of these rapidly aging assets existed in limited numbers. The operational effects of this were that the maneuver commander could not always move his units in a manner that facilitated speed, tactical initiative, and/or surprise. This limitation allowed the threat force into our decision cycles and gave them the ability to affect our maneuverability through the implementation of effective obstacle plans. Note that one of the key misunderstandings is that man-made obstacles are not typically employed to simply kill like other weapon systems. They are carefully placed to diminish the initiative, manpower, resources, or capabilities of one's opponent or to divert forces to areas that place them in a position of disadvantage.

There are two key differences at the macro level between the assured mobility of the Current Force and the FCS-equipped FBCT. The first is in the enabling technologies that permit a commander to predict and prevent or avoid impediments to the maneuverability of his unit earlier in a developing operation—the proactive piece mentioned earlier. The second is in the provision of mobility at the platform level. Key maneuver platforms will have the ability to locate, avoid, and/or survive the effects of many of the battlefield hazards that they will encounter. Coupling platform-level survivability with the predictive tools that identify hazards earlier greatly increases, at least in concept, the mobility of the FBCT. The simple math is that the less time spent in a reaction mode at an



Critical command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) linkages between processes/capabilities

obstacle or breach site, the lower the overall risk, the more lives saved, the more fully mission-capable vehicles, and the more firepower conserved for additional missions.

### FBCT Assured Mobility

**T**he vision of the FBCT overcomes many of these past shortcomings through key leaps in technology at a holistic level. The FCS is a uniquely large and complex U.S. Army acquisition initiative to develop a full range of technologically superior, interoperable, and cohesive systems. Often referred to as a “family of systems” or “system of systems,” the combined capability of the FCS will be greater than the mere sum of its parts. Current plans equip the majority of our brigade combat teams (BCTs) between 2020 and 2030; however, we have already started the tenuous process of this transformation.

Field Manual (FM) 3-34, *Engineer Operations*, describes assured mobility as all those actions that guarantee the commander the ability to deploy into theater and maneuver where and when he desires without interruption or delay. However, this is not just about technical improvements to fighting platform mobility. It incorporates a better understanding of the friendly/enemy disposition and the three-dimensional battlespace (subterranean, ground-level, and aerial) to permit commanders to act first within the threat opponent’s decision cycle to win the battle and finish decisively.

Superior situational awareness and selected fusion of information at various levels will provide leaders at all levels the tools necessary to make better-informed decisions on the fly. This improved situational awareness enables faster maneuver, not necessarily by moving faster, but by avoiding obstacles and providing the ability to recognize and converge on an open route or gap in an enemy defense.

The FBCT will achieve assured mobility through the employment of a family of systems that use a layered approach to harness the capabilities of the strategic, operational, and tactical

systems to conduct predictive analyses. Developing the situation begins by receiving mobility information from national collection assets, higher headquarters assets (special operations forces [SOF], sensors, and signal intelligence), and organic assets (unmanned aerial vehicles [UAVs], unmanned ground vehicles [UGVs], and sensors). However, in the FCS vision, every platform is also a sensor itself. All of this information is harnessed in the Battle Command Network, where it is fused with other sources of information in order to analyze it (with the help of automated tools).

The last step in this process is displaying the appropriate level of detailed information on the real-time COP. Leaders down to the small-unit level are enabled by the automated, virtual three-dimensional modified combined obstacle overlay (MCOO) to see potential impediments to maneuverability for both ground and air platforms (mobility choke points or potential enemy missile, rocket, artillery, and mortar systems). Every FCS manned platform, Future Tactical Truck System (FTTS), and Soldier system will provide information to enable these leaders to identify the best mobility corridors to support their schemes of maneuver, significantly expediting dissemination and implementation of this mobility data.

The commander will then use this information from the COP to develop, establish, and maintain an acceptable operating area. Choosing operating areas is critical to the commander’s ability to focus reconnaissance assets. The leaders have access to automated decision aids that use predictive algorithms that will be programmed to consider enemy doctrine, tendencies, and history regarding obstacles and antiaccess techniques. These are combined with known enemy disposition and terrain information to develop a prediction of the enemy plan to deny the FBCT freedom of maneuver. Based on this predictive analysis, reconnaissance troops use aerial and ground sensors with radar-based mine detection sensors to identify mined areas. Keep in mind that other assets have likely been observing most of this future operating area long before the FBCT entered the theater.

First-dimension impediments along subterranean corridors (booby-trapped caves or utility access ways) and third-dimension impediments (enemy air defense artillery [ADA], Man-Portable Air Defense Systems [MANPADS], obstacles such as antiair mines, and craters in runways at landing zones) are detected and avoided if possible. Based on detections, the commander selects and places demands on the intelligence system to further focus detection efforts in the operating area. Previous predictions are confirmed or denied, and an updated MCOO and predictive analysis are provided to commanders. This process is ongoing as it is today, but dissemination is much faster. This plan includes prediction of enemy actions and required sensor coverage to fill information voids within the operating area. Through this proactive process, ISR assets such as UAVs, unattended ground sensors (UGS), and/or the Intelligent Munitions System (IMS) may be assigned the role of observing critical areas to provide leaders with a higher fidelity of information before decisive commitment of assets to a given course of action. These ISR assets are linked with precision effects to form an active protective system that denies the enemy's ability to influence or degrade mobility at these critical points.

This is one way for the FBCT commander to attack the enemy's ability to influence lines of operation. These actions include any and all specific actions taken to preclude, deny, or prevent enemy maneuver or interdiction of FBCT routes. The commander proactively attacks those enemy systems capable of directly or indirectly impeding friendly ground or air maneuver, thus disrupting, neutralizing, or destroying his interdiction capability before it can be applied. The commander leverages capabilities such as precision munitions, dynamic obstacles (IMS and UGS), and joint effects to destroy enemy capability and deny him freedom of action. UGS and IMS are emplaced to overwatch key points on lines of operation and cue internal or external effects.

The combination of integrated attack operations (divisional/corps active/passive air and missile defense [AMD], aviation, and fires) enables domination and exploitation of the aerial battlespace and denies sanctuary to those systems that could impede friendly maneuver. Destruction of enemy air defense radars and weapons is the most effective shaping operation in support of third-dimension maneuver and is important in thwarting enemy antiaccess strategies at landing zones.

The FBCT must then maintain its mobility and momentum. Most mobility impediments can be mitigated through prediction, detection, and prevention. Impediments to ground mobility detected at standoff can be avoided by maneuver. There will be situations in which operational requirements dictate negotiation of areas that contain obstacles. These currently tend to use up the vast part of our operational time and resources. Even with decent intelligence, commanders typically are left in discovery-by-encounter roles that put troops and operations at increased risk.

In the future, the greater situational awareness provided to the commander will give him the ability to choose to avoid

impediments by bypassing them or require him to breach them. To avoid by bypassing or using precision neutralization will require knowing the precise locations of impediments (mines and improvised explosive devices [IED]; unexploded ordnance [UXO]; and chemical, biological, radiological, and nuclear [CBRN] hazards). To enable this, the combination of explosive ordnance/infrared radiation-equipped UAVs and UGVs with ground and aerial mine detection equipment will be employed. Wide-area surveillance from FBCT and divisional assets, and route reconnaissance by combined arms battalion assets, will identify changes from previous reconnaissance, thus identifying recently emplaced buried or surface-laid scatterable mines or the emplacement of IEDs to cue the ground mine-detection-equipped UGV. Change detection will allow leaders to find an unobstructed bypass or to precisely employ UGVs confirming the exact location of the mines and IEDs to neutralize (deactivate, jam, or destroy) them.

The FBCT will likely be dependent on augmentation from corps and/or division support modules to conduct traditional deliberate breach, CBRN detection and marking, and large gap-crossing operations. In areas with large concentrations of displaced civilians, civil affairs and psychological operations (PSYOPs) assets may be employed to mitigate the effects of displaced civilians on FBCT operations.

## Conclusion

Providing assured mobility is a continuous process that must be applied en route to and beyond the objective. Distributed, layered capabilities are critical to reducing the effects of mobility impediments to the lowest acceptable levels of risk to the force. By applying the four imperatives and six fundamentals of assured mobility, the unit of action is able to maintain momentum, maneuver out of contact to achieve a position of advantage, and if required, conduct tactical assault at a time and place of its choosing. There are still plenty of challenges left in this process for leaders and technical engineers to manage over the course of the next 10 to 20 years. Despite the advances in technology, it will be the Soldiers and leaders of today's Army who will assure the mobility of the Future Force.

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Author's Note: The development of this concept and of the FCS are the work of a great number of people. This article is based on TRADOC Pamphlet 525-66, *Force Operating Capabilities*, and conversations and briefings with many of its authors. FCS is recognized as fundamentally new and different, and as such, its organization and operations are merely the truth as it is today. The reality of the future may prove this analysis wrong.



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